Remarks

The examiner has rejected claims 3, 4, 7, 8, 13, 14, 17 and 18 under 35 U.S.C. §112, first paragraph. These claims have been amended to overcome this rejection. It is not believed that this constitutes a new issue since the examiner examined the claims as if this amendment had been made.

The examiner has rejected claims 1, 5, 6, 9, 10, 11, 15, 16, 19 and 20 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 5,115,415 to Arcuri, hereinafter Arcuri, and U.S. Patent 5,943,378 to Keba et al, hereinafter Keba et al. This rejection is not thought to be well taken. First, Arcuri teaches that the signal is converted from digital to analog for transmission, and is reconverted from analog to digital when received at the receiver. There is nothing in Arcuri that suggests a conversion of a synchronous digital signal to an asynchronous analog signal for transmission, and reconverting the asynchronous analog signal upon receipt to a synchronous digital signal. Moreover, and as recognized by the examiner, Arcuri does not teach the use of *a phase rotator* in conjunction with detecting *both* edges of the asynchronous pulse to convert the asynchronous analog pulse to a digital pulse, as is required by both claims 1 and 11, the only independent claims in the application; and it is submitted that Keba et al do not overcome this deficiency. The Keba et al patent is directed to a circuit for recovering a symbol clock and the locations cited by the examiner in Keba et al *do not* teach or suggest a phase rotator or phase rotation for any reason, let alone in conjunction with detecting *both edges* of the asynchronous signal. Indeed, Keba et al teach nothing about detecting both edges, but only a single edge, and the examiner's reference to reference character 220 to teach detection of both edges is not understood since this is referred to as an *edge selector*, not a detector of both edges. Additionally, Keba et al. use a phase lock loop (PLL) in converting analog signals to digital

signals. A phase rotator *is not* a PLL. In fact, Arcuri teaches the use of a PLL to generate a sync gate signal (col. 4, lines 1-2). Even more relevant, the applicants teach the use of a PLL for clocking signals in the conversion of synchronous digital signals to asynchronous analog signals (page 5, lines 21-22, Fig 2, reference character 36) while a phase rotator is used in conjunction with detection of both edges to convert asynchronous analog signals to synchronous digital signals (page 6, lines 21-23, Figure 3, reference character 54). Claims 1 and 11, the only independent claims in the application, contain each of these limitations and, thus, are clearly allowable.

Claims 5, 6, 15 and 16 are dependent upon claims 1 and 11, respectively, and, for the reasons previously stated, are believed to be allowable. Claims 9, 10, 19 and 20 are dependent, directly or indirectly on claims 1 and 11, respectively, and, for the reasons previously stated, are believed to be allowable. Additionally, while Keba et al do teach multiple signals, there is no suggestion that there are multiple signals used to derive each edge, which is required by claims 9, 10, 19, and 20. Thus, for this additional reason, claims 9, 10, 19 and 20 are believed to be allowable.

Claims 2, 3, 4, 12, 13 and 14 have been rejected under 35 U.S.C. §103 (a) as being unpatentable over Arcuri and Keba et al, and further in view of U.S. Patent 6,222,380 to Gerowitz et al, hereinafter Gerowitz et al. This rejection is not thought to be well taken. These claims are dependent directly or indirectly upon claims 1 and 11 and, for the reasons previously stated, are believed to be allowable. Moreover It is not enough that one may modify a reference in view of a second reference, but rather it is required that the second reference suggest modification of the first reference and not merely provide the capability of modifying the first reference.

The CAFC stated in In re Piasecki, 745 F.2d 1468, 223 USPQ 785, 788 (Fed. Cir. 1984) the following:

> "The Supreme Court in Graham v. John Deere Co., 383 U.S. 1 (1966), focused on the procedural and evidentiary processes in reaching a conclusion under Section 103. As adapted to ex parte procedure, Graham is interpreted as continuing to place the "burden of proof on the Patent Office which requires it to produce the factual basis for its rejection of an application under sections 102 and 103". Citing In re Warner, 379 F.2d 1011, 1020, 154 USPQ 173, 177 (CCPA 1967)."

The law is quite clear that in order for a claimed invention to be rejected on obviousness, the prior art must suggest the modifications sought to be patented; In re Gordon, 221 U.S.P.Q. 1125, 1127 (CAFC 1984); ACS Hospital System, Inc. v. Montefiore Hospital, 221 U.S.P.Q. 929, 933 (CAFC 1984). The foregoing principle of law has been followed in Aqua-Aerobic Systems, Inc. v. Richards of Rockford, Inc., 1 U.S.P.Q. 2d, 1945 (D.C. Illinois 1986). In the Aqua-Aerobic's case, the Court stated that the fact that a prior reference can be modified to show the claimed invention does not make the modification obvious unless the prior reference suggests the desirability of the modification. The CAFC in the case of In re Gorman, 18 U.S.P.Q. 2d (CAFC 1991) held at page 1888:

> "When it is necessary to select elements of various teachings in order to form the claimed invention, we ascertain whether there is any suggestion or motivation in the prior art to make the selection made by the applicant [citation]. 'Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination [citations]...."
>
> The references themselves must provide some teaching whereby the applicant's combination would have been obvious."

Further, the CAFC, in In re Oetiker, 24 U.S.P.Q. 2nd 1443, 1445 (CAFC 1992) held:

> There must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge can not come from the applicant's invention itself.

Most significantly, the CAFC in the case of In re Dembiczak, 50 U.S.P.Q.2nd 1614 (CAFC 1999) held at 1617:

> ...(examiner can satisfy burden of obviousness in light of combination 'only by showing some objective teaching [leading to the combination]');

Thus, it is clear that where an individual reference does not teach the entire invention, then the modification which the invention represents must be suggested and motivated by some other reference through some objective teaching and cannot come from the application itself, which is the case here. Therefore, for this additional reason, claims 2, 3, 4, 12, 13 and 14 are believed to be allowable.

Claims 7, 8, 17 and 18 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Arcuri, Keba et al, and Gerowitz et al in view of U.S. Patent 5,202,579 to Hillis et al, hereinafter Hillis et al. This rejection is not thought to be well taken. First, these claims are all dependent, either directly or indirectly, on claims 1 and 11, respectively, and, for the reasons previously stated, are believed to be allowable. Additionally, claims 7, 8, 17 and 18 require that the analog signal be converted in the receiver to two one-bit signals, delivered to a shift register, and then stored in a second data register. While there is some disclosure of two bits at a time being sequenced, there is nothing to compare to the specific methods claimed in claims 7 and 8 or the apparatus in claims 17 and 18. Thus, claims 7, 8, 17 and 18 are clearly allowable over any reasonable combination of the prior art.

In view of the above, it is believed that each of the claims now in the application is distinguishable one from the other and over the prior art.

Therefore, reconsideration and allowance of each of the claims now in the application is respectfully requested.

Respectfully submitted,

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WNH:cg